Sept. 22, 1953 L. RUBENSTEIN 2,653,060

TOOL HANDLE CONNECTION

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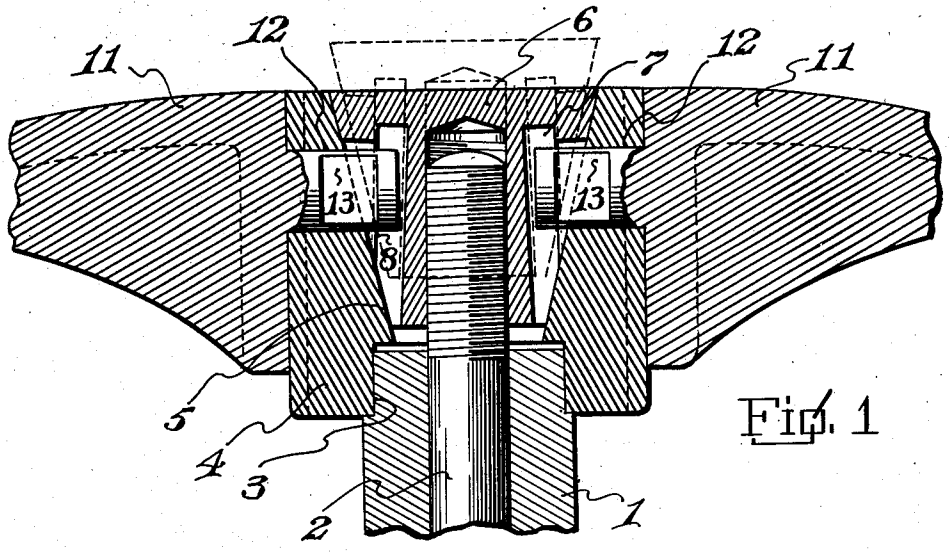


Fig. 1

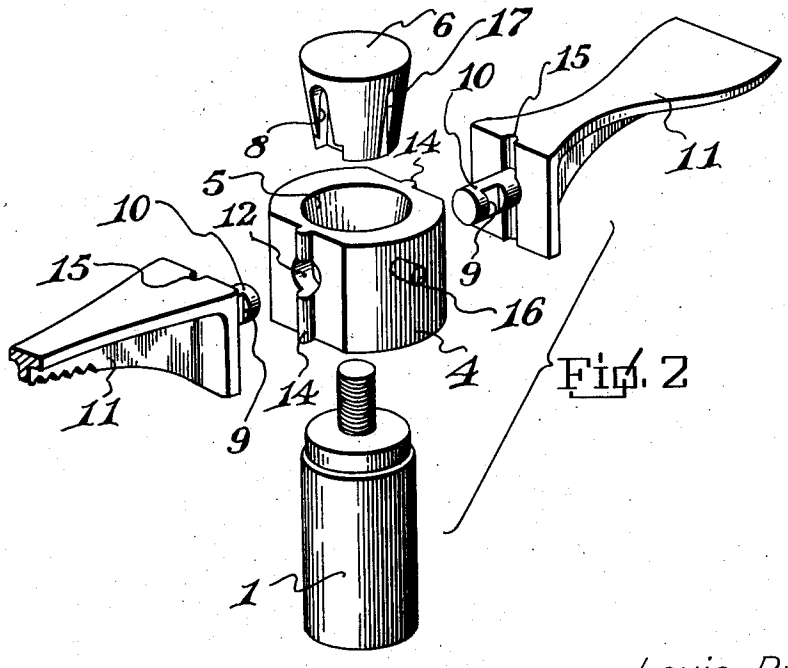


Fig. 2

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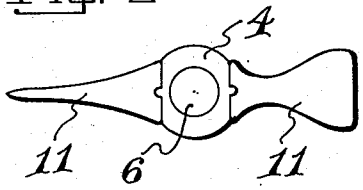
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Fig. 3



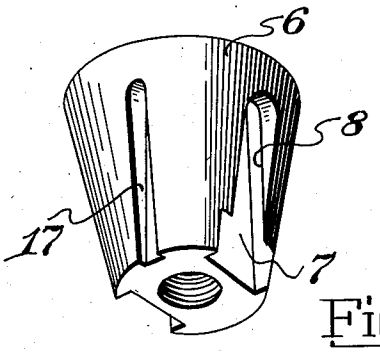


Fig. 5

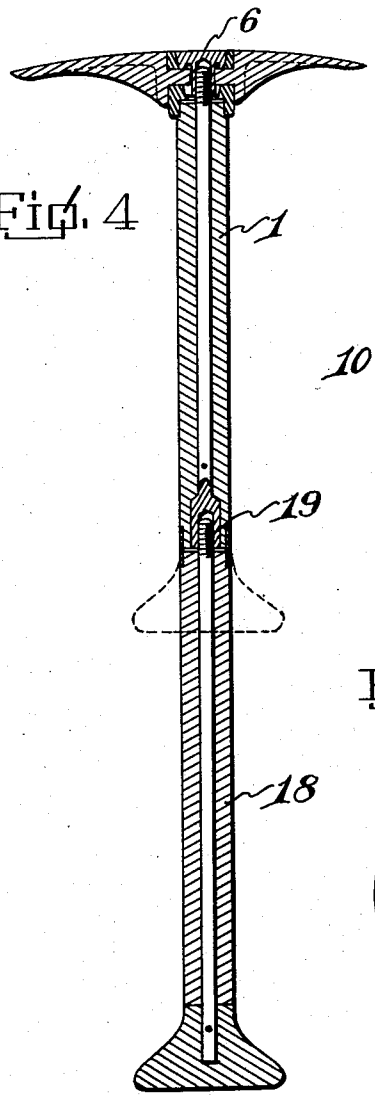


Fig. 4

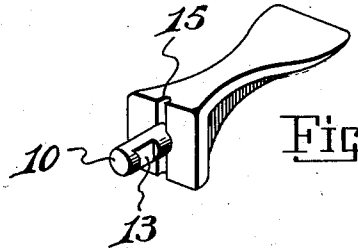


Fig. 6

Fig. 7

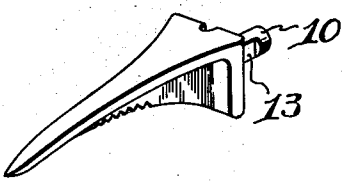
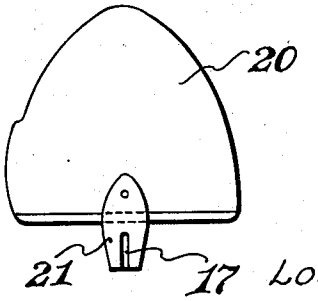


Fig. X



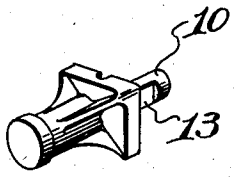


Fig. 9

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Patented Sept. 22, 1953 2,653,060

UNITED STATES PATENT OFFICE

2,653,060

TOOL HANDLE CONNECTION

Louis Rubenstein, Kansas City, Mo.

Application May 29, 1951, Serial No. 228,883

1 Claim. (Cl. 306—42)

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The invention relates to combination tool holders, and has for its object to provide a device of this character whereby various types of tools may be held by the holder so it will only be necessary to have one holder for all types of tools, preferably such tools as picks, shovels, hammers and adzes.

A further object is to provide a combination tool holder comprising a tool receiving head having a frusto conical chamber therein, in which head is received a frusto conically shaped wedging block having outwardly converging T-slots therein for engaging over headed members carried by the tools, and which headed members extend through openings in opposite sides of the head and into the T-slots. Also to provide the tool head with a handle member having a bolt threaded into the wedge block and adapted to draw the wedge block inwardly for imparting an inward pull on the headed members of the tools.

A further object is to provide interengaging means between the inner ends of the various tools and the tool receiving head for preventing rotation of the tools on the head.

A further object is to provide an extension handle for use when it is desired to use the adze or pick or any other tool usually provided with a long handle.

With the above and other objects in view the invention resides in the combination and arrangement of parts as hereinafter set forth, shown in the drawings, described and claimed, it being understood that changes in the precise embodiment of the invention may be made within the scope of what is claimed without departing from the spirit of the invention,

In the drawings:

Figure 1 is a vertical longitudinal sectional view through the tool head, and portions of adjacent tools.

Figure 2 is a collective detailed perspective view of the parts of the tool holder showing the same in position to be assembled.

Figure 3 is a plan view of the outer end of the tool head.

Figure 4 is a longitudinal sectional view through the tool holder showing an extension handle in connection with the tool.

Figure 5 is a perspective view of the wedge block.

Figure 6 is a perspective view of an adze tool adapted to be used in connection with the device.

Figure 7 is a perspective view of a pick adapted to be used in connection with the device.

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Figure 8 is a plan view of a shovel attachment for the device.

Figure 9 is a perspective view of a hammer head adapted to be used with the device.

Referring to the drawings, the numeral 1 designates a hammer handle, and 2 a shaft extending therethrough. The inner end of the handle 1 is disposed in a counterbore 3 of a tool head 4. The tool head 4 is preferably of the shape shown in Figure 2, and is provided with a frusto conically shaped chamber 5, in which chamber is received a frusto conically shaped wedge block 6. Shaft 2 threads into the inner end of the block 6, and when tightened, draws the block 6 downwardly into the chamber 5. Opposite sides of the wedge block are provided with T-shaped outwardly converging slots 7, thereby forming wedging shoulders 8 engaging over the opposite flanges 9 of the lugs 10 carried by the tools 11, which tools may be of any type desired, as shown in the various views.

It will be noted that the lugs 10 extend through radial apertures 12 in the tool head 4, and their flattened portions 13 are in the restricted portions of the T-slots 7, thereby preventing rotation of the tools.

Referring to Figure 1, it will be seen that when the wedge block 6 is drawn inwardly, the shoulders 8 of the T-slots will engage the flanges 9 of the lugs and will draw the tools inwardly into close engagement with the outer periphery of the tool head. To further prevent twisting, and to take the strain off the T-slots, opposite sides of the head 4 are provided with ribs 14 received in similarly shaped grooves 15 of the detachable tool elements. The prevention of twisting of the tools is particularly desirable where digging or percussive tools are used.

To insure proper guiding of the wedge block 6, and to hold against rotation, during a tool securing operation, the tool head 4 is provided with a guide pin 16, the inner end of which pin is slidably mounted on a key slot 17 of the wedge block; see Figure 2.

Referring to Figure 4, an extension handle 18 is shown which may be threadedly engaged at 19 to the shaft 2 for forming an extension handle. This is particularly desirable when the device is used as a pick or shovel. In Figure 8 is shown a shovel 20, provided with a cone 21 similar in construction to the wedge block 6, without the T-slots, hence it will be seen that the shovel attachment can be readily applied to the device.

From the above it will be seen that a combination tool holder is provided which will receive various types of tools, and said tools will

be positively and rigidly held thereby. It will also be seen that the tools may be easily and quickly attached or removed by simply rotating the handle and the shaft 2.

The invention having been set forth what is claimed as new and useful is:

A tool head adapted to receive various kinds of tools, said head having a frusto conically shaped chamber therein on the axis of the head, a handle member carried by the head on the axis thereof and at the inner side of the head, the inner narrow end of the frusto conically shaped chamber being disposed adjacent the handle and the wide end of the frusto conically shaped chamber at the outer end of the head, opposite sides of said head being flat and in parallel relation, the inner ends of detachable tools engaging said flat portions of the head, interengaging rib and groove connections between the tools and the head, round lugs carried by the tools and extending inwardly through the head and through apertures in the head and terminating within the frusto conically shaped chamber of the head intermediate the ends of the head, opposite shoulders carried by the inner ends of the lugs within the chamber of the head, a wedge

block within the chamber of the head and conforming to the shape of the chamber of the head, said wedge block having oppositely disposed longitudinal channels T-shaped in cross section and adapted to receive the flanges carried by opposite sides of the lugs, the outer sides of the channels forming wedge shaped flanges adapted to engage the inner sides of the lug flanges and draw the lugs inwardly towards the axis of the head and means carried by the handle and cooperating with the wedge block for drawing said wedge block inwardly into the chamber of the head.

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